# NSLS OHSAS Job Risk Assessment

**The only official copy of this file is the one on-line in the NSLS ESH website. Before using a printed copy, verify that it is the most current version by checking the document issue date on the NSLS ESH website.**

| **Name(s) of Risk Team Members:** A. Ackerman, Q. Guo, Z. Liu | **Point Value → Parameter ↓** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| **Job Title:** **Work with Lasers**<br>**Job Number or Job Identifier:** **LS-JRA-0033** | **Frequency (B)** | **≤once/year** | **≤once/month** | **≤once/week** | **≤once/shift** | **>once/shift** |
| **Job Description:** This JRA evaluates general laser use at NSLS beamlines and laboratories. It covers use with Class II, Class IIIA, Class IIIB, and Class IV lasers. | **Severity (C)** | **First Aid Only** | **Medical Treatment** | **Lost Time** | **Partial Disability** | **Death or Permanent Disability** |
| Training and Procedure List (Optional): | **Likelihood (D)** | **Extremely Unlikely** <<1x/20yrs | **Unlikely** 1x/10-20yrs | **Possible** >1x/10-20yrs | **Probable** 1x/yr | **Multiple** >1x/yr |
| Approved by: W. R. Casey Date: 9/16/05<br>Rev. #: 1 **Revision Log** | | | | | | |
| **Stressors (if applicable, please list all):** | | **Reason for Revision (if applicable):** | | | **Comments:** | |

| | | **Before Controls** | | | | | | | **After Initial Controls** | | | | | | **After Additional Controls** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Job Step / Task** | **Hazard** | **Stressors Y/N** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **Initial Controls** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **Control(s) Added to Reduce Risk** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **% Risk Reduction** |
| Using Class II laser for alignment or sample illumination | Temporary vision problem | N | 1 | 3 | 1 | 3 | 9 | Exp. review, training, laser registration, laser use permit, signs, beam stop, never use optical instrument to view laser, use lowest power practical | 1 | 3 | 1 | 2 | 6 | | | | | | | |

# NSLS OHSAS Job Risk Assessment

**The only official copy of this file is the one on-line in the NSLS ESH website. Before using a printed copy, verify that it is the most current version by checking the document issue date on the NSLS ESH website.**

| | | Before Controls | | | | | | | After Initial Controls | | | | | | After Additional Controls | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Job Step / Task** | **Hazard** | **Stressors Y/N** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **Initial Controls** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **Control(s) Added to Reduce Risk** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **% Risk Reduction** |
| Using Class IIIA laser for alignment or scattering experiment | Temporary vision problems, eye injury | N | 1 | 3 | 1 | 3 | 9 | Exp. review, training, laser registration, laser use permit, signs beam stop, never use optical instrument to view laser, use lowest power practical | 1 | 3 | 1 | 2 | 6 | | | | | | | |
| Using Class IIIB laser in experimental set up for scattering or spectroscopy | Eye injury | N | 1 | 3 | 3 | 3 | 27 | Exp. review, training, laser registration, approved written procedures, protective eyewear, signs, beam stop | 1 | 3 | 1 | 1 | 3 | | | | | | | |
| Using Class IIIB laser in experimental set up for scattering or spectroscopy | Skin Burns | N | 1 | 3 | 1 | 4 | 12 | Exp. review, training, laser registration, approved written procedures, protective eyewear, signs, beam stop | 1 | 3 | 1 | 2 | 6 | | | | | | | |
| Using Class IV laser in experimental set up for scattering or spectroscopy | Eye injury | N | 1 | 3 | 4 | 3 | 36 | Exp. review, training, laser registration, approved written procedures, protective eyewear, signs, enclosed beam path, beam stop, interlocks | 1 | 3 | 1 | 1 | 3 | | | | | | | |

# NSLS OHSAS Job Risk Assessment

**The only official copy of this file is the one on-line in the NSLS ESH website. Before using a printed copy, verify that it is the most current version by checking the document issue date on the NSLS ESH website.**

| | | Before Controls | | | | | | | After Initial Controls | | | | | | After Additional Controls | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Job Step / Task** | **Hazard** | **Stressors Y/N** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **Initial Controls** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **Control(s) Added to Reduce Risk** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | **% Risk Reduction** |
| Using Class IV laser in experimental set up for scattering or spectroscopy | Skin Burns | N | 1 | 3 | 3 | 4 | 36 | Exp. review, training, laser registration, approved written procedures, protective eyewear, signs, enclosed beam path, beam stop, interlocks | 1 | 3 | 3 | 2 | 18 | | | | | | | |
| Using Class IV laser in experimental set up for scattering or spectroscopy | Fire | N | 1 | 3 | 2 | 3 | 18 | Exp. review, training, fire detection, Tier I | 1 | 3 | 1 | 2 | 6 | | | | | | | |
| Servicing or repairing Class IV laser | Electrocution | N | 1 | 2 | 5 | 3 | 30 | Exp. review, training, laser registration, approved written procedures, protective eyewear, signs, beam stop, interlocks, work planning, NFPA 70E | 1 | 2 | 2 | 2 | 8 | | | | | | | |
| | Burns | N | 1 | 2 | 4 | 2 | 16 | | 1 | 2 | 2 | 2 | 8 | | | | | | | |
| | Eye injury | N | 1 | 2 | 4 | 2 | 16 | | 1 | 2 | 2 | 2 | 8 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

**Further Description of Controls Added to Reduce Risk:**

| ***Risk:** | **0 to 20 Negligible** | **21 to 40 Acceptable** | **41 to 60 Moderate** | **61 to 80 Substantial** | **81 or greater Intolerable** |
|---|---|---|---|---|---|